

Critical Success Factors in Six Sigma Implementation – A Case Study of MNCs in Malaysia

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Abstract - Research objective is to survey Six Sigma implementation in Malaysian Multinational Corporation (MNCs) and identify the Critical Success Factors (CSFs) these companies use in ensuring its successful implementation. Research is anchored to the method of exploratory survey conducted via online among MNCs using Six Sigma in Malaysia. Preliminary findings of influence breakdown of each CSF results in with Management Commitment (85%), Absorption (95%), Cultural Influence (85%), Project/Process Assessment (100%) and Training & Awareness (100%). Detailed statistical analysis concluded CSFs that have direct impact in Six Sigma implementation are Management Commitment, Absorption, Project/Process Assessment and Training & Awareness. We have through this study established a clear guideline on CSFs necessary to adopt in order to ensure the correct implementation of Six Sigma in organizations. It is envisaged that local Malaysian companies' will use these findings as reference on the initiative of implementing Six Sigma methodologies in their business.

Key words: Six Sigma, Critical Success Factors (CSFs), Total Quality Management (TQM), Continuous Improvement (CI), Research Method (RM)

I. INTRODUCTION

Malaysia is vision to be a fully developed status country by year 2020 [1]. To achieve the planned progression there is a fundamental need for the business organization operating in the country to deliver consistent and quality productivity throughput. This requirement is a must to ensure our competitiveness in the business world which has become more integrated and globalized [2].

Thus there is an increasing need for companies in Malaysia to embrace global productivity methods and work cultures that have proven to bring success to MNCs in their operations around the world as shown in companies such as GE, Motorola and Toyota [3,4,5].

Implementation of productivity tools in multinational companies in ensuring successful business is well documented [6]. Two fundamental methods used by these companies to improve their productivity are to eliminate waste and to reduce variations in their processes by applying appropriate productivity tools such as TQM, Six Sigma and Lean methodologies [7].

Earlier studies into the field of productivity methodology and tools in Malaysia touched on the application of TQM in Malaysia. In a literature review published on TQM implementation in Malaysia by Lau

and Idris [8] concluded that though the TQM is a proven systematic approach to the improvements in global business, the lack of information and data on CSFs were hindering the implementation of TQM effectively and successfully. Thiagarajan [9] concluded that a framework should provide useful advice in the critical first two to three years of TQM implementation as a practical and systematic tool for assessing, measuring, and evaluating the progress made.

This research is embarked with vision to bring clarity on productivity methodologies and identify the key Critical Success Factors (CSFs) that is essential for the successful implementation of the tools in local organizations. In ensuring a firm grip on the research path, this study uses the following procedures [10]:

- a) Assessment of the relevant existing knowledge
- b) Formulation of the concepts and proportions.
- c) Statement of hypothesis
- d) Design of research to test the hypothesis
- e) Meaningful data collection
- f) Analysis and evaluation of the data
- g) Conclusion of the factual findings.

II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

CSFs is defined as an element that is necessary for an organization or project to achieve its mission and it is a critical factor or activity required for ensuring the success of a company or an organization [11,12]. CSFs are required to ensure success of an organization; therefore it must be given special and continual attention to bring about high performance. CSFs include issues vital to an organization's current operating activities and to its future success [13].

The method of identifying CSFs as a basis for determining the information needs was proposed by Daniel [11]. The idea mooted was that in any organization certain factors will be critical to the success of that organization, in the sense if objectives associated with the factors are not achieved the organization will fail [14]. Huotari and Wilson [14] wrote that the value of the CSFs approach is in identifying organizational objectives and relating the information needs of personnel in various positions to achieve those objectives. It's further stressed that proposed CSFs approach should be used as integral part of thought process methods in determining the needs